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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,651	06/28/2001	Dieter Otto	1589.GLE.PT	4840

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EXAMINER

TRIEU, THERESA

ART UNIT PAPER NUMBER

3748

DATE MAILED: 01/13/2004

*26*

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application N .

09/787,651

Applicant(s)

OTTO, DIETER

Examiner

Theresa Trieu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 33-42, 62, 93-101, 119, 120, 122 and 123 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 33-42, 62, 93-101, 119, 120, 122, 123 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 21, 25. 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This Office Action is responsive to the Amendment filed on April 1, 2003

Claims 33-42, 62, 93-101, 119, 120, 122 and 123 are pending in this application.

The indicated allowability of claims 33-42, 62, 93-101, 119, 120, 122 and 123 are withdrawn in view of the newly discovered reference(s) to US 5,037,283 and US 4,616,984. Rejections based on the newly cited reference(s) follow.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***1. Claims 33, 38, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kapur et al. (Kapur) (Patent Number 5,037,283) in view of Inagaki et al. (Inagaki) (Patent Number 4,616,984).***

Re claims 33 and 62, as shown in Figs 1 and 4, Kapur discloses a vacuum pump comprising: a drivable rotor (5) having a blade (15, 16, 17, 18, 19, 20) in a housing which can be set in rotation, the rotor (5) being formed as one piece, the rotor comprising a first

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longitudinal section (not numbered; however, clearly seen in Fig. 1) configured for being coupled to a drive shaft (not numbered; however, clearly seen in Fig. 2) via which a torque can be transmitted from a drive shaft to the rotor (5) and that the first longitudinal section being formed as one piece with the rotor and wherein the rotor has a slot (21, 22, 23, 24, 25, 26) and first and second support sections (56, 57 – see Fig. 3). However, Kapur fails to disclose the rotor being a plastic.

As shown in Figs. 1 and 2, Inagaki teaches that it is conventional in the art to utilize the rotor (24) being a plastic. It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the plastic rotor, as taught by Inagaki in the Kapur apparatus, since the use of thereof would have reduced the cost and to provide a lightweight pump.

Regarding claims 38, Kapur further discloses the slot (21, 22, 23, 24, 25, 26) has a diameter is smaller than the rotor (5) diameter in the area of the slot in which the blade is displaceable.

**2. Claims 34-37, 41, and 42, 93-96, 100, 101, 119, 120, 122 and 123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kapur ('283) in view of Inagaki ('984) as applied to claim 33 above, and further in view of Hattori et al. (Publication Number JP 61-149594).**

The modified Kapur device discloses the invention as recited above; however, the modified Kapur fails to disclose the cavities extending into the central area of the rotor.

Re claim 34, 93, Hattori et al. teach that it is conventional in the art to utilize the cavity (19) opening at the edge of the rotor (1); the rotor (1) having at least two cavities (19) which are

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each introduced from a frontal side of the rotor and that the rotor having at least one closed wall (not numbered; however, clearly seen in Figure 1 and 2) running transversely or essentially transversely to the central longitudinal axis of the rotor (1), the wall separating the cavities (19) from one another in the axial direction. With regard to claims 35-37, 41, and 42, 94, 95, 96, 100, 101, 122, 123 as shown in Figures 2, 3 and 7, Hattori et al. further disclose the cavity is introduced from a position consisting of the group of the drive shaft (3), frontal side of the rotor, and the frontal face of the rotor (2) turned away from the drive; the rotor (2) comprising walls having a slight thickness (see Figure 2); the rotor (2) comprising two wall areas and a transition between the two wall areas of the rotor having a different thickness, and which is continuous; the rotor having at least two cavities (19) disposed next to one another which are separated from one another by a rib (see Figure 7); the rotor (1) having wall areas and wherein the rib is thinner than the rest of the wall areas of the rotor (see Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the rotor having the cavity as taught by Hattori et al., to reduce the weight of the rotor, in the modified Kapur device.

***3. Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kapur ('283) in view of Inagaki ('984) as applied to claim 33 above, and further in view of design choice.***

The modified Kapur device discloses the invention as recited above; however, the modified Kapur fails to disclose a diameter size of at least one of the supports.

It is examiner's position that one having ordinary skill in the vacuum pump art, would have found it obvious to utilize the diameter of at least one on the supports is the same size/

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smaller than the rotor diameter in the area of the slot, since they are merely design parameters, depending on the temperature, pressure, or stress acted/applied on the vane, the rotor. Moreover, there is nothing in the record which establishes that the claimed diameter size of at least one of the supports, presents a novel of unexpected result (See *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975)).

***Claims 97-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kapur ('283) in view of Inagaki ('984) as applied to claim 33 above, further in view of Hattori et al. (Hatori) ('594) as applied to claim 93 above, and further in view of design choice.***

The modified Kapur device discloses the invention as recited above; however, the modified Kapur fails to disclose a diameter size of at least one of the supports.

It is examiner's position that one having ordinary skill in the vacuum pump art, would have found it obvious to utilize the diameter of at least one on the supports is the same size/ smaller than the rotor diameter in the area of the slot, since they are merely design parameters, depending on the temperature, pressure, or stress acted/applied on the vane, the rotor. Moreover, there is nothing in the record which establishes that the claimed diameter size of at least one of the supports, presents a novel of unexpected result (See *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975)).

### ***Communication***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa Trieu whose telephone number is 703-308-6434. The examiner can normally be reached on Monday-Thursday 7:30am- 6:00pm - Friday off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E Denion can be reached on 703-308-2623. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

TT

January 11, 2004



Theresa Trieu

Patent Examiner

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